

STATEMENT OF WORK

NATURAL RESOURCES PROTECTION

Introduction

The National Center for Environmental Economics (NCEE), of the U.S. Environmental Protection Agency is seeking assistance for technical support in the areas of:

- Activities that Impact Natural Resources.
- Assessment of Impacts in Terms of Emissions Released to the Air, Water and Land.
- Human and Ecological Exposure Assessments.
- Human and Ecological Risk Characterization.
- Economic Implications of Activities that Impact Natural Resources

The National Center for Environmental Economics is EPA's center of expertise for cutting-edge research and analysis in environmental economics. The National Center for Environmental Economics is located in the Office of Policy, Economics and Innovation. NCEE's primary function is to assist the EPA's program and staff offices in applying sound economic science in the development of analyses that support the Agency's actions. NCEE also provides health analysis of important environmental issues in the Agencies regulatory and policy development processes, especially regarding crosscutting environmental management strategies and emerging issues.

NCEE conducts and supervises a wide array of research and development on economic analytic methods, and provides guidance and support for performing economic analyses throughout the Agency. The National Center serves as an information resource for EPA, other government departments and agencies, and the public on benefit-cost analyses, economic impact models and measurement, and economic incentive measures. The Center also promotes consistency in the preparation and presentation of economic information in the Agency.

NCEE conducts research that will improve our current understanding of the impacts of environmental contaminants on our natural resources. They conduct research on environmental health issues to improve risk assessment data used in regulatory impact analyses and to aid in the evaluation and design of environmental programs. The Center's projects emphasize identifying and developing new methods for assessing previously unidentified risks, assessing relationships between exposures and disease, and developing tools to communicate this information to the public.

General Requirements

This contract shall require the Contractor to research, evaluate and analyze data in the areas mentioned above, as it relates to the Agency's regulatory and non-regulatory programs. This shall include Agency policies that impact sectors of the economy that rely on consumptive and

non-consumptive uses of our natural resources to include food and fiber production and processing, forestry, mining, and recreation/tourism.

Specific types of analyses under this contract shall include: environmental release analyses, including fate and transport, human and ecological exposure assessments, dose response analysis, and quantitative and qualitative assessment of risk to human health and the environment. In addition, work under this contract may require the contractor to assess: economic impacts, effects on trade, and impacts on specific markets.

(1) In evaluating and performing the services required under this Statement of Work, the contractor shall certify that conclusions are based on available data and shall submit all relevant information used in developing conclusions or options to the Work Assignment Manager (WAM) for review and approval.

(2) All reports, drafts, papers, etc. prepared by the contractor shall be first submitted in draft form to the WAM for review and approval. These drafts shall include copies of the literature cited or make reference to all citations. Review of these drafts by EPA and others will be made in consultation with the Contractor before the final report is submitted.

(3) If the contractor is authorized access to Confidential Business Information (CBI) and/or other classified information in accordance with the applicable provisions, then the Contractor shall prepare a Confidential Business Information Plan and shall maintain compliance with the plan after approval by the EPA. The Contractor shall comply with all statutes, rules, regulations and policies applicable to CBI. The Contractor's CBI security plan must be compatible with the Agency's *Security Plan for Confidential Business Information*.

(4) When in attendance at meetings, the contractor's attendance shall be limited to that portion of the activity for which the contractor is required in order to meet the requirements of the SOW. Contractor employees shall identify themselves as contractor personnel in all activities associated with work performed under the SOW, and while in attendance at meetings in conjunction with activities associated with the SOW requirements.

(5) Reports submitted by the Contractor that rank policy or action alternatives for the Agency (which will be used by EPA personnel in developing policy) shall describe the procedures used to arrive at the recommendations. The reports shall summarize the substance of deliberation, report any dissenting views, list the sources relied upon, and make clear the methods and considerations upon which the recommendations and rankings are based.

Work Areas

The EPA requires analytical support in the following areas and will issue individual task orders in accordance with the appropriate section(s) of this solicitation.

A. SUBJECT AREAS

1) **Baseline Analysis**

Under this statement of Work, the Contractor shall develop a baseline analysis (existing conditions absence of EPA intervention or a “no action” alternative) that can be used to measure the effectiveness of EPA programs to safeguard our natural resources. The contractor shall evaluate changes to the baseline conditions of our natural resources resulting from the implementation of Agency regulatory programs, or other non-regulatory programs, including voluntary and negotiated initiatives (e.g., Excel, Performance Track). The primary objective of Agency programs is to promote protection of public health and the environment. Safeguarding the air, water and land is paramount to that objective. In order to adequately assess the impacts the Agency’s programs have on natural resources, it is critical that the EPA possess a measure or benchmark against which to gauge progress. Additionally, baseline analyses can be useful in setting priorities for investing Agency resources.

2) **Evaluation of Changes to the Baseline as a Result of the Implementation of Agency Programs**

In order for the Agency to assess impacts on our natural resources and have an indication of how human health and the environment will be affected by those impacts, we will need to conduct a risk assessment that examines the consequences of Agency programs. A risk assessment could focus on human health or ecological effects.

a) Changes in Emissions Released to the Environment.

EPA’s regulatory and non-regulatory programs are intended to protect the environment and public health. Most of the Agency’s programs will eventually have an impact on the amounts of toxic substances released to the air, water and on the land. The contractor shall assess the changes in the amount and type of emissions released to the environment as a result of the implementation of Agency programs.

b) Hazard Identification

Hazard identification involves characterizing the nature and strength of the evidence of causation. Generally, the scientific basis for much of the analysis done in risk assessment is well established. Therefore, the contractor shall, through the existing literature and analysis, research and evaluate the hazards posed to human health and the environment by the release of toxic substances that are specifically the focus of an Agency program, e.g., the registration of the pesticide terbufos on corn. Under the Hazard Identification, the Contractor shall also include data on chemical specific assessments of dose response relationships. This assessment shall be used to determine the likely response, human or ecological, resulting from exposure to a substance.

c) Exposure Assessments

An exposure assessment measures, models or estimates the intensity, frequency and duration of exposure to humans or animal species to some toxic agent that are currently present in the environment. An exposure assessment may also be used to estimate hypothetical exposures that

might arise from the release of a new substance in the environment. An exposure assessment in its most complete form will evaluate the magnitude, duration, schedule, and route of exposure, in addition to the size, nature and class of the exposed population. Under this contract, the Contractor may be required to develop or utilize existing exposure assessments, based on fate and transport estimates, so as to be able to quantify the size and nature of the exposed population, as well as the level duration and frequency of exposure.

d) Assessment of Benefits: Reduced Risk to the Public and the Environment

Based on the changes from the baseline estimates of risk (or changes in emissions or changes in exposure) as a result of implementing the Agency's regulatory (and/or non-regulatory) programs, the contractor shall assess the public health and/or environmental benefits.

e) Development of Environmental Indicators

In addition to the subtasks listed above, NCEE also requires technical support for the development of environmental indicators. Environmental indicators are useful for summarizing benefit information and for tracking trends in natural resource use and protection. Indicators may include levels of contamination in the environment, and any adverse effects to our natural resources resulting from environmental contamination. Work in this subtask may include:

- Compiling data on releases, emission levels, etc. from existing databases and studies conducted by the EPA or other agencies.
- Develop methods for converting raw data into relevant environmental indicators.
- Calculating actual environmental indicators.

3) Economic Impact Analysis

The National Center for Environmental Economics is responsible for providing broad policy development and technical support to the Agency in the area of economic impact analysis. These analyses will provide a complete picture of the relationships that exist between economic and natural resources systems. To support the National Center in this area, the contractor shall perform economic analyses, focusing on the causes and consequences of changes in the use and quality of our natural resources. The Contractor shall also assess the costs of measures to adapt to and mitigate environmental change. Economic impacts resulting from Agency programs, both regulatory and non-regulatory, will be assessed so that the results could be integrated into a Regulatory Impact Analysis where costs are weighed against the benefits of a program. To support the National Center in this area, the Contractor shall perform these economic analyses in accordance with the *EPA's Guidelines for Preparing Economic Analyses of Federal Regulations*, and OMB's *Economic Analysis of Federal Regulations*.

Major areas of analyses needed under this work area may include global or regional externalities, uncertainty, long-term cumulative effects, complex environmental and market interactions requiring multidisciplinary approaches, and potentially significant non-market and/or non-use value effects resulting from environmental change.

Approaches to be applied will vary across work assignments and shall be determined by the analytical needs of the problem at hand.

The following sub-areas of work further detail the economic analyses to be performed by the Contractor.

a) Cost Analysis

The Contractor shall analyze the cost impacts from the implementation of various regulatory and non-regulatory, command and control, or incentive programs that may be considered. This will involve the cost of industry compliance: testing and monitoring, modification to production processes, engineering controls, fees, taxes, tradable permits, incentives, bans on production, processing, use or importation, in addition to labeling, reporting and record keeping. Based upon data from EPA, industry, and secondary sources, the Contractor will provide analyses of the incremental annualized costs of alternative technology options. The Contractor will analyze the incremental annualized costs using capital and operating and maintenance costs. The Contractor shall analyze the incremental annualized costs for each facility/firm and aggregate the information at the national level for each standard.

b) Industry Profiles

The Contractor shall characterize various industries by type, size, number of facilities, sales revenues, profit margins, products, prices, employment and other pertinent data. The industry profile information shall be used, along with scientific and technical information, to determine the appropriate subcategories for industries subject to regulation. This information will be used, among other purposes, to assess baseline conditions in industries that will be regulated. Analyses may be conducted for individual plants, industrial or governmental sectors, or on a national or international level. Analyses may include impacts on private firms' revenues and profits, revenues and expenditures in the public sector. Also analyses may include the distribution of costs between producers and consumers (changes in surplus) in affected markets, and the implications for domestic and international employment, prices, productivity, and trading of goods and services.

c) Economic and Regulatory Analysis

The Contractor shall provide data to be used by the Agency in the analysis of regulatory and non-regulatory options and technology alternatives, including data on the impacts of each option or alternative on the regulated community, and estimates of total annualized and social costs. The data shall include information such as the economic impacts of regulations at the firm and/or facility level with respect to costs, production, prices, profits, and employment. The Contractor may be required to conduct analyses to compare total costs of regulations to the total output of the economy. The Contractor shall assess policy alternatives (but not develop policy) using market-based parameters, e.g., effluent user charges, marketable permits. The analyses shall also assess the effects of policy alternatives on various stakeholders.

The analyses shall consider distributional effects and identify gainers and losers resulting from different options and policy approaches. The analysis of distributional effects may consider the incidence of costs, benefits or other impacts by group, region, or size of the affected entities.

Market and economic incentives shall be assessed as substitutes or compliments to regulation and as alternative policy approaches. These analyses shall be developed using appropriate econometric and regulatory models, drawn from peer-reviewed literature, including general and partial equilibrium models, financial models, etc.

Work in this sub-area may require evaluating and up-dating existing estimates of environmental values. In addition, this sub-area may require estimating values using techniques such as:

- contingent valuation,
- hedonic price models,
- travel cost models,
- random utility models,
- conjoint analysis,
- and, other applicable techniques.

Further, the Contractor may be required to integrate value estimates into regional or national systems of accounts, and develop indicators of environmental quality, biodiversity, sustainability and vulnerability.

d) Modeling of Economic, Social and Environmental Systems

The contractor shall develop, empirically estimate, calibrate and validate economic, social and environmental systems models and apply such models to selected policy and other scenarios. For many problems it may be necessary to integrate these models. Work in this sub-area may require statistical and econometric analyses of empirical data to test hypotheses and measure quantitative relationships among economic, social behavior and environmental change.

4) Weighing the Benefits and Costs of Natural Resource Protection

In this task, the Contractor shall have to weigh the benefits of natural resources protection against the costs to society of safeguarding our natural resources. There is not a limitless supply of resources to address every hazard and threat to our environment. And, it is for this reason that the Agency must have a methodology or framework where it can address the worst risks first. In addition, faced with finite resources, it is crucial that we are able to examine various control options designed to protect our natural resources and identify the ones that provide the greatest benefit when weighed against the costs.

In this task, the Contractor shall prepare benefit-cost, or if necessary, cost-effectiveness analyses that compare the social costs and benefits of implementing regulatory and non-regulatory control options. This analysis may include environmental benefits, health benefits, recreational benefits, and ecological benefits. If possible, the Contractor shall monetize these benefit estimates. Costs shall be expressed, where possible, in terms of changes in consumer and producer surplus. The

Contractor shall develop and /or modify economic and benefit models that will accomplish the Agency's goals of balancing risk reduction against the societal cost of taking action. The Contractor shall also prepare, if required, studies that develop underlying methods, economic models and additional information needed to perform both benefit-cost and cost-effectiveness analyses. In addition, these analyses shall address, if required, the following:

- Sensitivity and uncertainty analysis focusing on the modeled outcomes of benefits and costs.
- Other impacts of costs and benefits affecting small businesses, demographic groups, geographical locations and specific ecosystems.
- Justification and support for appropriate discount rates, time frames, latency periods, and baselines.
- Statistical and other approaches for describing and quantifying uncertainties in the benefit-cost/cost-effectiveness analyses.
- Alternatives to the traditional command and control Agency actions such as user fees and other economic incentives.

B. Related Subject Areas

1) Literature and Document Review

The contractor shall provide technical reviews, analysis and/or guidance on information (including books, reports, journal articles, conference proceedings, unpublished documents and research reports selected by EPA) related to the subject areas covered by this scope of work. The contractor shall have the capability for quick turnaround reviews, as well as reviews requiring a more structured and longer process. These reviews shall include preparation of bibliographies. When required by the work assignment, bibliographies shall be annotated with the contractors providing summaries and/or evaluations of source documents.

2) Document Preparation

The contractor shall provide technical, administrative, editorial and graphics assistance for the preparation of special reports, outreach documents, and briefing papers on issues related to the subject areas covered in this scope of work. These efforts will include conducting information searches, technical writing, editing, graphics preparation, and report layout and production. These efforts also will include the identification, selection, and utilization of individuals or teams with appropriate knowledge and expertise.

3) Peer Review

The contractor may be required to conduct peer review of any studies or analysis performed by the contractor, or others. Peer Review will be performed in accordance with the *EPA Peer Review Guidelines*.

4) Data Acquisition and Data Base Management

The Contractor shall collect and organize data to be used by the Agency in its analysis of technical issues related to subject areas covered by this scope of work. Using or adapting existing software applications programs, the Contractor shall design forms, collect and enter data, manipulate the data as required by the work assignment, and design and produce formal and ad hoc reports. The Contractor shall conduct these activities in such a way as to maintain the integrity of the data and shall institute data security measures as directed in the work assignment.

5) Logistical Support

In support of meetings, workshops, training sessions, or conferences, the Contractor shall arrange for facilitators (with appropriate technical qualifications) and facilities including audiovisual equipment, preparing and/or distributing materials, contacting participants, taking notes, and writing summary reports.

6) Outreach Support

The contractor shall provide support for EPA's outreach programs. These efforts will build on existing international, federal, state and local environmental information efforts. Examples of specific areas under outreach support include: (1) preparation of informational and educational materials; (2) preparation of graphics and audio-visuals; (3) analyses of public opinion; (4) marketing studies; (5) outreach meetings; and (6) recognition events.

7) Survey Analysis

The contractor shall provide assistance in the development of survey instruments, testing of survey instruments on focus groups, administration of surveys, and analysis of data to investigate the causes and consequences of environmental change, use and valuation of natural resources, and perceptions and attitudes regarding environmental risks and amenities. Work in this area may involve a variety of modes of administration including, but not limited to, phone, mail, computer-assisted kiosk, Internet, as well as combinations of modes. Work in this area may also require data entry of collected survey data. Tasks issued to the contractor requiring survey work shall conform to the *Paperwork Reduction Act* and other OMB rules on Information Collection Requests.